

AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior listings, and all prior versions, of claims in the above-identified application.

LISTING OF CLAIMS:

1. (Currently amended) A method for cleaning-~~processing~~ a plasma processing apparatus having a plasma generating means for generating plasma within a processing chamber, a high-frequency power applying means for applying high-frequency power to an object to be processed, a processing chamber to which an evacuating device is connected and which has its interior evacuated, and a gas supply device for the processing chamber, said method comprising:

mounting a Si wafer on an electrode for holding the object to be processed, while the Si wafer is mounted on the electrode, introducing a mixed gas of hydrobromic gas and chlorine gas into the processing chamber and generating plasma, and
removing an aluminum fluoride deposit adhered to the interior of the processing chamber by applying the high-frequency power to the Si wafer.

2. (Cancelled).

3. (Currently amended) A method for cleaning-~~processing~~ a plasma processing apparatus for generating a plasma in a vacuum container of the plasma processing apparatus and plasma processing a substrate placed on a substrate holder disposed within the vacuum container, said method comprising:

providing a period for cleaning an aluminum fluoride deposit in the vacuum container by generating plasma containing chlorine gas and hydrobromic gas and additionally an element that reacts with fluorine to create a gas-phase reaction

product either each time after plasma processing a wafer or plural wafers or before and after plasma processing.

4. – 7. (Cancelled).

8. (Currently amended) The method for cleaning~~processing~~ a plasma processing apparatus according to claim 3, further comprising:

_____placing a Si wafer, with no patterns printed thereon, on the substrate holder when the plasma including chlorine gas and hydrobromic gas is discharged; and
_____applying high-frequency power to the Si wafer through the substrate holder.

9. (Currently amended) The method for cleaning~~processing~~ a plasma processing apparatus according to claim 3, further comprising:

_____placing a Si wafer, with no patterns printed thereon, on the substrate holder when the plasma including chlorine gas and hydrobromic gas is discharged; and
_____applying high-frequency power to the Si wafer through the substrate holder, wherein the high-frequency power being applied corresponds to a frequency of 400 kHz and is equal to or greater than 0.11 W per unit area (1 cm^2) of the Si wafer.

10. (Currently amended) The method for cleaning~~processing~~ a plasma processing apparatus according to claim 3, wherein

a ratio of an area of an earth to the area of an inner wall of the vacuum container in contact with plasma is 40 % or more.

11. and 12. (Cancelled).

13. (Currently amended) The method for cleaning~~processing~~ a plasma processing apparatus according to claim 3, wherein

N₂, CO, CO₂, H₂ or SO₂ is supplied simultaneously with the chlorine gas and the hydrobromic gas contained in the plasma gas.

14. (Currently amended) The method for cleaning-~~processing~~ a plasma processing apparatus according to claim 3, further comprising:

providing a period for generating plasma containing SF₆ prior to said period for generating plasma with the chlorine gas and hydrobromic gas.

15. (Currently amended) The method for cleaning-~~processing~~ a plasma processing apparatus according to claim 3, wherein said plasma containing chlorine gas and hydrobromine gas additionally contains Si, to create the gas phase reaction product.

16. (Currently amended) The method for cleaning-~~processing~~ a plasma processing apparatus according to claim 3, wherein a portion of material constituting the vacuum container includes Si, and ~~the cleaning processing for cleaning~~ the aluminum fluoride deposit in the vacuum container is performed using the chlorine gas and the hydrobromic gas.

17. (Currently amended) The method for cleaning-~~processing~~ a plasma processing apparatus according to claim 3, wherein the plasma containing chlorine gas and hydrobromic gas, used in the cleaning processing, additionally contains SiCl₄ gas.